

[54] CONDUCTIVE ADHESIVE MEDICAL ELECTRODE ASSEMBLIES

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ABSTRACT

A medical electrode adapted for providing electrical contact with a patient's skin and comprising:

(a) a conductive member including means for connecting the medical electrode to an external electrical apparatus; and

(b) interfacing means comprising a solid sheet of a conductive viscoelastic hydrophilic gel which is a homogeneous aqueous mixture, substantially free of unbound water, monomers and cross-linking agents, consisting essentially of

(i) water;

(ii) an amount dissolved in the water of a water soluble electrolyte effective to reduce the transverse electrical resistance of the sheet to an impedance at 60 Hz of less than 1,000 ohms; and

(iii) an amount dispersed uniformly throughout the water of from about 2 to 35 wt % of a cross-linked polyethylene oxide, effective to form with the water a tacky surface viscoelastic adhesive solid; which hydrophilic gel is produced by subjecting a liquid film of an aqueous solution having a viscosity of about  $2-2,000 \times 10^3$  cps of the electrolyte and a linear water soluble polyethylene oxide having a weight average molecular weight from about  $0.05-10 \times 10^6$  Daltons to an amount of high energy radiation effective to convert the liquid film to a sheet of adhesive viscoelastic solid.

11 Claims, 11 Drawing Figures

